


Fuel Suppliers and Hydrogen Producers Reporting GHG Emissions

Subpart P - Hydrogen Production
Subpart MM – Suppliers of Transportation Fuels
Subpart NN – Suppliers of Natural Gas and Natural Gas Liquids
Subpart PP – Suppliers of Carbon Dioxide

March 21, 2012
 Presentation Slides Available Here:
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>

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This training is provided by ARB solely for informational purposes. It does not provide legal advice and does not have legally binding effect. This training does not supplant, replace or amend any of the legal requirements in the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, title 17, California Code of Regulations, sections 95100-95157. Conversely, any omission or truncation of regulatory requirements found within this training does not relieve any entity or person of their legal obligations to fully comply with all requirements of the regulation.


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Training Resources

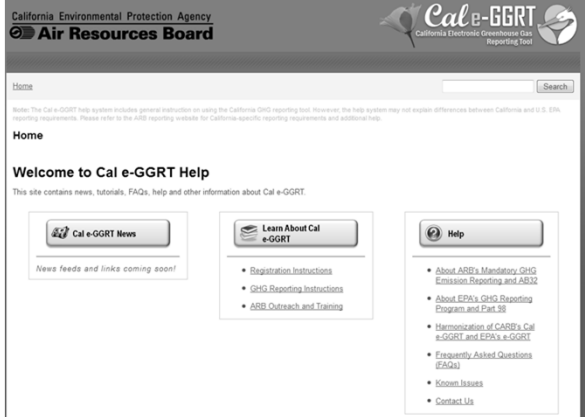
- Reporting Guidance: Applicability, Metering
<http://www.arb.ca.gov/cc/reporting/ghg-rep/guidance/guidance.htm>
- Cal e-GGRT Main Help Page
<http://www.ccdsupport.com/confluence/display/calhelp/Home>
- U.S. EPA Detailed Sector Training Slides
<http://www.epa.gov/climatechange/emissions/training.html>
 (use as a supplement to ARB summary slides)
- Tool Training: Registration, Subparts
<http://www.arb.ca.gov/cc/reporting/ghg-rep/tool/ghg-tool.htm>
- Cal e-GGRT Sandbox Training Site
<https://ssldev.arb.ca.gov/Cal-eGGRT/>

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Cal e-GGRT Help

<http://www.ccdsupport.com/confluence/display/calhelp/Home>



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Outline

- Define the regulatory basis for reporting
 - Which EPA and ARB regulations pertain to your reporting subpart?
- Overview of Cal e-GGRT
 - Registration
 - Tabs (Home, Facility Management, Data Reporting)
 - Adding Subparts to define your facility reporting footprint
- Data reporting for your Subpart

California Air Resources Board

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Subpart P ARB Regulatory Basis for Reporting

Date	Action
1/1/2012	California Air Resources Board MRR Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, title 17, California Code of Regulations, Sections 95100-95157 http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010_regulation.htm
12/17/2010	Corrects technical and editorial errors, and clarifies rule provisions for subparts C, D, E, F, G, H, K, N, O, P, Q, R, S, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, NN, OO and PP. Preamble and Rule (PDF) (81 pp, 667K)
10/28/2010	Corrects technical and editorial errors, and clarifies rule provisions for subparts E, H, K, N, O, P, Q, S, V, Z, CC, EE, GG, HH, LL, and NN. Preamble and Rule (PDF) (47 pp, 376K)
10/30/2009	Finalizes the mandatory reporting of 30 source categories for Reporting Year 2010. These comprise subparts: A, C, D, E, F, G, H, N, O, P, Q, R, S, U, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, LL, MM, NN, OO, and PP. Preamble and Rule (PDF) (261 pp, 2.6MB)

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Subpart MM ARB Regulatory Basis for Reporting

Date	Action
1/1/2012	California Air Resources Board MRR Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, title 17, California Code of Regulations, Sections 95100-95157 http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010_regulation.htm
10/28/2010	Corrects technical and editorial errors, and clarifies rule provisions for subparts E, H, K, N, O, P, Q, S, V, Z, CC, EE, GG, HH, LL, and NN. Preamble and Rule (PDF) (47 pp, 376K) (MM also addressed)
10/30/2009	Finalizes the mandatory reporting of 30 source categories for Reporting Year 2010. These comprise subparts: A, C, D, E, F, G, H, N, O, P, Q, R, S, U, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, LL, MM, NN, OO, and PP. Preamble and Rule (PDF) (261 pp, 2.6MB)

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Subpart NN ARB Regulatory Basis for Reporting

Date	Action
1/1/2012	California Air Resources Board MRR Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, title 17, California Code of Regulations, Sections 95100-95157 http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010_regulation.htm
12/17/2010	US EPA - Corrects technical and editorial errors, and clarifies rule provisions for subparts C, D, E, F, G, H, K, N, O, P, Q, R, S, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, NN, OO and PP. Preamble and Rule (PDF) (81 pp, 667K)
10/28/2010	US EPA - Corrects technical and editorial errors, and clarifies rule provisions for subparts E, H, K, N, O, P, Q, S, V, Z, CC, EE, GG, HH, LL, and NN. Preamble and Rule (PDF) (47 pp, 376K)
10/30/2009	US EPA - Finalizes the mandatory reporting of 30 source categories for Reporting Year 2010. These comprise subparts: A, C, D, E, F, G, H, N, O, P, Q, R, S, U, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, LL, MM, NN, OO, and PP. Preamble and Rule (PDF) (261 pp, 2.6MB)

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Subpart PP
ARB Regulatory Basis for Reporting

Date	Action
1/1/2012	California Air Resources Board MRR Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, title 17, California Code of Regulations, Sections 95100-95157 http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/2010_regulation.htm
12/17/2010	US EPA - Corrects technical and editorial errors, and clarifies rule provisions for subparts C, D, E, F, G, H, K, N, O, P, Q, R, S, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, NN, OO and PP. Preamble and Rule (PDF) (81 pp, 667K)
10/30/2009	US EPA - Finalizes the mandatory reporting of 30 source categories for Reporting Year 2010. These comprise subparts: A, C, D, E, F, G, H, N, O, P, Q, R, S, U, V, X, Y, Z, AA, BB, CC, EE, GG, HH, JJ, LL, MM, NN, OO, and PP. Preamble and Rule (PDF) (261 pp, 2.6MB)

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What is Cal e-GGRT Used For?

- Cal e-GGRT is the system used to report all data required by the GHG mandatory reporting regulation.
- The tool contains modules for each sector required to report.
– Also includes modules for Fee Regulation and SF₆
- Multiple users can be associated with a single facility or entity.
- Verifiers can be associated with facilities and entities in the tool for data review purposes.

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Overview of Cal e-GGRT Operation

- Registration – old and new reporters.
- Input required facility information.
- Adding subparts for reporting.
- Entering emissions data.
- Data reporting mechanisms.
– Direct interface, XML spreadsheet uploads, spreadsheet attachments (varies by sector)
- Validation messages.

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Registration

- Need an ARB Registration Code to register in Cal e-GGRT
– New reporters must request an ARB Registration Code prior to registration. Send an e-mail request to
ghgreport@arb.ca.gov

March 1: Registration and System Overview
A brief overview of registering in the new Cal e-GGRT system and overall system operation.
Slides: [1-per-page \(color\)](#) [4-per-page \(B&W\)](#)
[Detailed Registration Instructions](#)

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Cal e-GGRT Tabs

Home tab

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Cal e-GGRT Tabs

Facility Management Tab

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Cal e-GGRT Tabs

Data Reporting Tab

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Reporting Emissions

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Reporting Emissions

REPORT DATA

2011 Reporting Source or Supplier Category	Validation Messages?	Subpart Reporting
Sections 95100-95108 (Subpart A)—General Information	View Messages	OPEN
Sections 95115, 95112 (Subpart C)—Stationary Fuel Combustion	View Messages	OPEN
Section 95114 (Subpart P)—Hydrogen Production	View Messages	OPEN
Section 95121 (Subpart MM)—Suppliers of Petroleum Products	View Messages	OPEN
Section 95122 (Subpart NN)—Suppliers of Natural Gas and NGLs	View Messages	OPEN
Section 95123 (Subpart PP)—Suppliers of Carbon Dioxide (CO ₂)	View Messages	OPEN
Sections 95201-95207—AB 32 Cost of Implementation Fee Regulation	View Messages	OPEN

ADD or REMOVE Subparts

SUBPART ATTACHMENTS

Uploaded File Name	Subpart	Uploaded By	Uploaded Date
Patrick Equation C-2b (PHV) Calculation Spreadsheet.xls	C	Patrick Gaffney	March 9, 2012

SUBMIT ANNUAL REPORT

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

Report	Uploaded File Name	Status	Submitted Date	Certification Date

VERIFICATION BODY

You may only select a verification body after the report has been generated.

California Air Resources Board

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Reporting: Adding Subparts

California Environmental Protection Agency
Air Resources Board
California Electronic Greenhouse Gas Reporting Tool

HOME | FACILITY MANAGEMENT | DATA REPORTING

Cal e-GGRT Help
How to add a subpart and report data

ARB Test Facility - TEST ONLY - Production Site (2011)
e-GGRT Greenhouse Gas Data Reporting
Select Facility » Facility Overview » Section (Subpart) Selection

SECTION (SUBPART) SELECTION
Please check all relevant ARB rule sections for this facility or supplier. Further information can be found in the e-GGRT Help links to the left.

EPA SUBPARTS D - AA

- ☐ 95112 (Subpart D)—Acid Rain Program EGU
Description (SHOW | HIDE)
- ☐ 95110 (Subpart H)—Cement Production
Description (SHOW | HIDE)
- ☐ 95116 (Subpart I)—Glass Production
Description (SHOW | HIDE)
- ☒ 95114 (Subpart P)—Hydrogen Production
Description (SHOW | HIDE)
- ☐ 95120 (Subpart Q)—Iron and Steel Production

GENERAL STATIONARY FUEL COMBUSTION

- ☒ 95115, 95112 (Subpart C)—Stationary Fuel Combustion
Description (SHOW | HIDE)

SUPPLIER CATEGORIES

- ☒ 95121 (Subpart MM)—Suppliers of Petroleum Products
Description (SHOW | HIDE)
- ☒ 95122 (Subpart NN)—Suppliers of Natural Gas and Natural Gas Liquids
Description (SHOW | HIDE)
- ☒ 95123 (Subpart PP)—Suppliers of Carbon Dioxide

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Reporting: Adding Subparts

Description (SHOW | HIDE)

- ☒ 95114 (Subpart P)—Hydrogen Production
Description (SHOW | HIDE)
- ☐ 95120 (Subpart Q)—Iron and Steel Production
Description (SHOW | HIDE)
- ☐ 95117 (Subpart S)—Lime Manufacturing
Description (SHOW | HIDE)
- ☐ 95118 (Subpart V)—Nitric Acid Production
Description (SHOW | HIDE)
- ☐ 95150-95157 (Subpart W)—Oil and Natural Gas Systems
Description (SHOW | HIDE)
- ☐ 95113 (Subpart Y)—Petroleum Refineries
Description (SHOW | HIDE)
- ☐ 95119 (Subpart AA)—Pulp and Paper Manufacturing
Description (SHOW | HIDE)

[CANCEL](#) [SAVE](#)

- ☒ 95122 (Subpart NN)—Suppliers of Natural Gas and Natural Gas Liquids
Description (SHOW | HIDE)
- ☒ 95123 (Subpart PP)—Suppliers of Carbon Dioxide
Description (SHOW | HIDE)

AB 32 COST OF IMPLEMENTATION FEE REGULATION

- ☒ 95201-95207—AB 32 Cost of Implementation Fee Regulation
Description (SHOW | HIDE)

SF6 GAS INSULATED SWITCHGEAR

- ☐ 95350-95359—SF6 Gas Insulated Switchgear
Description (SHOW | HIDE)

ELECTRIC POWER ENTITIES

- 95111—Electric Power Entities
Not currently available for selection
Description (SHOW | HIDE)

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Data Reporting

REPORT DATA

2011 Reporting Source or Supplier Category	Validation Messages?	Subpart Reporting
Sections 95100-95108 (Subpart A)—General Information	View Messages	OPEN
Sections 95115, 95112 (Subpart C)—Stationary Fuel Combustion	View Messages	OPEN
Section 95114 (Subpart P)—Hydrogen Production	View Messages	OPEN
Section 95121 (Subpart MM)—Suppliers of Petroleum Products	View Messages	OPEN
Section 95122 (Subpart NN)—Suppliers of Natural Gas and NGLs	View Messages	OPEN
Section 95123 (Subpart PP)—Suppliers of Carbon Dioxide (CO ₂)	View Messages	OPEN
Sections 95201-95207—AB 32 Cost of Implementation Fee Regulation	View Messages	OPEN

ADD or REMOVE Subparts

SUBPART ATTACHMENTS

Uploaded File Name	Subpart	Uploaded By	Uploaded Date
Patrick Equation C-2b (PHV) Calculation Spreadsheet.xls	C	Patrick Gaffney	March 9, 2012

SUBMIT ANNUAL REPORT

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

Report	Uploaded File Name	Status	Submitted Date	Certification Date

VERIFICATION BODY

You may only select a verification body after the report has been generated.

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Data Reporting – Subpart P

(Open Subpart P module to begin reporting)

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95114 (Subpart P): Hydrogen Production
 Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS
 Subpart P is for facilities that produce hydrogen gas sold as a product to other entities. It includes process units that produce hydrogen by reforming, gasification, oxidation, reaction, or other transformations of feedstocks. This source category includes merchant hydrogen production facilities located within a petroleum refinery if they are not owned by, or under the direct control of, the refinery owner and operator.

OTHER FACILITY REPORTING INFO

Carbon, other than CO ₂ , collected and transferred off-site (kg carbon)	Annual quantity of liquefied hydrogen produced (short tons)

HYDROGEN PRODUCTION UNITS

Name/ID	CO ₂ (metric tons)	Status*	Delete
No units have been added			

ADD a Unit

HYDROGEN PRODUCTION UNITS (Units monitored by CEMS)

Name/ID	Status*	Delete
No units have been added		

ADD a Unit Monitored by CEMS

Facility Overview

*A status of "incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness

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Reporting – Subpart P

(other facility info)

California Environmental Protection Agency
Air Resources Board
 HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help
 Using Cal e-GGRT for Subpart P reporting

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95114 (Subpart P): Hydrogen Production
 Subpart Overview • Other Facility Reporting Info

SUBPART P OTHER INFORMATION
 Please complete the required information included below.

Annual quantity of carbon, other than CO₂, collected and transferred off site in either gas, liquid or solid forms (kg carbon)

Annual quantity of liquefied hydrogen produced (short tons)

CANCEL SAVE

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Reporting - SubpartP

(add a unit)

California Environmental Protection Agency
Air Resources Board
 HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help
 Using Cal e-GGRT for Subpart P reporting

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95114 (Subpart P): Hydrogen Production
 Subpart Overview • Add/Edit a Unit • CEMS

SUBPART P UNITS
 Please indicate if this unit's emissions are monitored using a (CEMS). * denotes a required field

CONTINUOUS EMISSIONS MONITORING

Is this unit's emissions monitored using a CEMS? ☐ Yes ☒ No

CANCEL SAVE

Contact Us Cal e-GGRT RY2011.R.54 | P(cems)

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Reporting – Subpart P

(new unit)

Section 95114 (Subpart P): Hydrogen Production
 Subpart Overview • Add/Edit a Unit

SUBPART P HYDROGEN PRODUCTION UNIT
 Please identify and enter the information about the Unit below. Also, add each carbon-containing input and output material. * denotes a required field

UNIT INFORMATION

Name or ID* Big Boy 1 (40 characters maximum)

Description (optional) SMS Unit

Type Hydrogen production process unit

UNIT PRODUCTION INFORMATION

Quantity of hydrogen produced 4500000 (metric tons)

Quantity of ammonia produced 0 (metric tons)

FUELS AND FEEDSTOCKS

Name	Type	Delete
ADD a Fuel or Feedstock		

CONTINUOUS EMISSIONS MONITORING

Is this unit's emissions monitored using a CEMS? ☐ Yes ☒ No

Note: Changing the answer to this question will result in losing any data, associated with this Unit for the current reporting year, as the reporting requirements will change.

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Reporting – Subpart P (adding a fuel or feedstock)

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Air Resources Board

Cal e-GGRT
California Electronic Greenhouse Gas Reporting Tool

HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help

Using Cal e-GGRT for Subpart P reporting

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95114 (Subpart P): Hydrogen Production
Subpart Overview » Add/Edit a Unit » Feedstock

SUBPART P HYDROGEN PRODUCTION UNIT
Please identify the fuel or feedstock. * denotes a required field

UNIT
Name or ID: Big Boy 1

FUEL OR FEEDSTOCK DETAILS
Name: Natural Gas
Type: gaseous feedstock

CANCEL SAVE

Contact Us Cal e-GGRT RY2011 R.54 | P(feedstock)

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Reporting – Subpart P

HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help

Using Cal e-GGRT for Subpart P reporting

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95114 (Subpart P): Hydrogen Production
Subpart Overview » GHG Info » Big Boy 1

CO2 CARBON DIOXIDE (CO2) EMISSIONS CALCULATION
Use equation P-1, P-2 and/or P-3 for each feedstock below as appropriate to calculate unit total annual CO2 process emissions for the hydrogen processing unit.

NATURAL GAS
Use the Equation P-1 Calculation Spreadsheet to calculate the result. Upload the completed XML, exported from the spreadsheet.
P-1 Equation P-1 Calculation Spreadsheet

Uploaded File Name Attached By Date Delete

No files found.

If any consumption, carbon content or molecular weight (if gaseous) values are based on substitute data values

CANCEL

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Reporting – Subpart P

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Cal e-GGRT
California Electronic Greenhouse Gas Reporting Tool

HOME » ... » Subpart Reporting Instructions » Subpart P - Hydrogen Production » Using Subpart P Calculation Spreadsheets

Notes: The Cal e-GGRT help system includes general instruction on using the California GHG reporting tool; however, the help system may not explain differences between California and U.S. EPA reporting requirements. Please refer to the ARB reporting website for California-specific reporting requirements and additional help.

Using Subpart P Calculation Spreadsheets

This help page provides guidance for working with the supplemental Subpart P calculation spreadsheets. The guidance provides step-by-step instructions for the following tasks:

- Selecting the Appropriate Calculation Spreadsheet
- Downloading a Calculation Spreadsheet
- Exporting XML from a Completed Spreadsheet
- General information on Using a Calculation Spreadsheet
- Using the Equation P-1 Calculation Spreadsheet
- Using the Equation P-2 Calculation Spreadsheet
- Using the Equation P-3 Calculation Spreadsheet

Specific information on each of the calculation spreadsheets is provided below:

Calculation Spreadsheets (click to download)	Selection Criteria: Feedstock Type	Instructions (click to view)
Equation P-1 Calculation Spreadsheet.xls	Gaseous	P-1 Help
Equation P-2 Calculation Spreadsheet.xls	Liquid	P-2 Help
Equation P-3 Calculation Spreadsheet.xls	Solid	P-3 Help

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Reporting – Subpart P

Calculation Spreadsheets (click to download)	Selection Criteria: Feedstock Type	Instructions (click to view)
Equation P-1 Calculation Spreadsheet.xls	Gaseous	P-1 Help
Equation P-2 Calculation Spreadsheet.xls	Liquid	P-2 Help
Equation P-3 Calculation Spreadsheet.xls	Solid	P-3 Help

Selecting the Appropriate Calculation Spreadsheet

Subpart P requires a facility to report annual CO₂ emissions from each hydrogen production process unit. To calculate the annual CO₂ emissions from each hydrogen production process unit, users must use one or more of three equations based on the unit feedstock consumed during the data collection year. Users may use different calculation worksheets for different process units as required by the feedstock type for each unit. Users may use more than one calculation worksheet for a process unit if the unit has more than one type of feedstock.

For each process unit with a gaseous feedstock, users should calculate annual CO₂ emissions using Equation P-1 via the Equation P-1 Calculation Worksheet. Equation P-1 is provided below:

$$\text{(Equation P-1)} \quad CO_2 = \left(\sum_{n=1}^k \frac{44}{12} * Fdstk_n * CC_n * \frac{MWF}{MFC} \right) * 0.001$$

For each process unit with a liquid feedstock, users should calculate annual CO₂ emissions using Equation P-2 via the Equation P-2 Calculation Worksheet. Equation P-2 is provided below:

$$\text{(Equation P-2)} \quad CO_2 = \left(\sum_{n=1}^k \frac{44}{12} * Fdstk_n * CC_n \right) * 0.001$$

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Reporting – Subpart P

Subpart P - Hydrogen Production - Calculating CO₂ Emissions Using Equation P-1

1. FOLLOW THE INSTRUCTIONS ON THE NEXT TAB (DATA EXPORT GUIDANCE) FOR INSTRUCTIONS ON HOW TO EXPORT YOUR DATA.

Version: Cal e-GGRT RY2011 R.01
Today's date: 3/15/2012

Equation P-1:
$$CO_2 = \left(\sum_{i=1}^{12} \frac{F_{di} \cdot C_{di}}{12} \right) \cdot CC_i + \frac{MFI}{MFC} \cdot 0.001$$

Facility Name: _____
Reporter Name: _____
Unit Name ID: _____
Reporting Period: _____
Comments: _____
Unit Type: Hydrogen Production Process Unit

Input Data

Month	Fdi (kg) = Volume of the gaseous fuel and feedstock used in month i (at standard conditions of 68 °F and atmospheric pressure) of fuel and feedstock	Cdi = Average carbon content of the gaseous fuel and feedstock, from the results of one or more analyses for month i (kg carbon per kg of fuel and feedstock). If measurements are taken more frequently than monthly, use the arithmetic average.	CCi = Average carbon content of the gaseous fuel and feedstock, from the results of one or more analyses for month i (kg carbon per kg of fuel and feedstock). If measurements are taken more frequently than monthly, use the arithmetic average.
January			
February			
March			

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Reporting – Subpart P

Subpart P - Hydrogen Production - Calculating CO₂ Emissions Using Equation P-1

1. FOLLOW THE INSTRUCTIONS ON THE NEXT TAB (DATA EXPORT GUIDANCE) FOR INSTRUCTIONS ON HOW TO EXPORT YOUR DATA.

Version: Cal e-GGRT RY2011 R.01
Today's date: 3/15/2012

Equation P-1:
$$CO_2 = \left(\sum_{i=1}^{12} \frac{F_{di} \cdot C_{di}}{12} \right) \cdot CC_i + \frac{MFI}{MFC} \cdot 0.001$$

Facility Name: _____
Reporter Name: _____
Unit Name ID: _____
Reporting Period: _____
Comments: _____
Unit Type: Hydrogen Production Process Unit

Input Data

Month	Fdi (kg) = Volume of the gaseous fuel and feedstock used in month i (at standard conditions of 68 °F and atmospheric pressure) of fuel and feedstock	Cdi = Average carbon content of the gaseous fuel and feedstock, from the results of one or more analyses for month i (kg carbon per kg of fuel and feedstock). If measurements are taken more frequently than monthly, use the arithmetic average.	CCi = Average carbon content of the gaseous fuel and feedstock, from the results of one or more analyses for month i (kg carbon per kg of fuel and feedstock). If measurements are taken more frequently than monthly, use the arithmetic average.
January			
February			
March			

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Reporting – Subpart P

Guidance for Exporting Data to XML

1. Enter all data for each worksheet within the workbook where indicated.

2. Save your workbook.

3. Export Excel data to XML.

For Excel 2003, select the menu Data / XML / Export.

For Excel 2007 and Excel 2010, right click within a linked cell. Select XML / Export.

Equation P-1:
$$CO_2 = \left(\sum_{i=1}^{12} \frac{F_{di} \cdot C_{di}}{12} \right) \cdot CC_i + \frac{MFI}{MFC} \cdot 0.001$$

Entity Submission Information

Entity Name	Entity Type	Entity ID
Hydrogen Production Process Unit		

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Additional Information for Hydrogen Producers who also report as Suppliers of Carbon Dioxide

- Does your facility capture and sell CO₂?
- If you are required to report under Subpart PP (Suppliers of CO₂) - there is the possibility of double-counting "transferred CO₂" emissions.
- Use the provision in 95114(g) to subtract emissions that are reported using other calculation methods from your facility total.
- ARB will issue guidance on this topic.

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Reporting – Subpart MM

California Environmental Protection Agency
Air Resources Board
Cal e-GGRT
California Electronic Greenhouse Gas Reporting Tool

HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95121 (Subpart MM): Suppliers of Petroleum Products
Subpart MM Overview

OVERVIEW OF SUBPART MM REPORTING REQUIREMENTS
Subpart MM requires uploading an XML file. Please use the MM spreadsheet to create your XML and upload the file here.

Subpart MM: View Validation

SUBPART MM SUMMARY INFORMATION FOR THIS FACILITY

1.) DOWNLOAD FORM
Suppliers of Transportation Fuels Calculation and Reporting Tool

2.) UPLOAD COMPLETED FORM

Upload File Name Attached By Date Delete

No files found

Facility Overview

Contact Us Cal e-GGRT RY2011 R.54 MM-overview

California Air Resources Board

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Reporting – Subpart MM

California Environmental Protection Agency
Air Resources Board
Cal e-GGRT
California Electronic Greenhouse Gas Reporting Tool

HOME GHG Reporting Instructions Reporting Form Instructions

Reporting Form Instructions

Note: The Cal e-GGRT help system includes general instruction on using the California GHG reporting tool. However, the help system may not explain differences between California and U.S. EPA reporting requirements. Please refer to the GHG reporting website for California-specific reporting requirements and additional help.

This help page provides guidance for using Reporting Forms and Cal e-GGRT to report GHG emissions and other required information for a subpart.

For each applicable subpart from the list below, users must report their facility's total emissions of each applicable GHG directly into Cal e-GGRT and submit required supplemental data and information using Excel-based Reporting Forms which may be downloaded as described below. The Reporting Forms are meant to provide reporters with a simple and straightforward means for reporting required data and information for the subparts listed below and DO NOT ASSIST REPORTERS IN CALCULATING EMISSIONS.

- Subpart A - General Information
- Subpart Q - Iron and Steel Production
- Subpart S - Lime Manufacturing (CEMS users only)
- Subpart V - Nitric Acid Production
- Subpart W - Oil and Natural Gas Systems
- Subpart Y - Petroleum Refineries
- Subpart MM - Suppliers of Petroleum Products
- Subpart NN - Suppliers of Natural Gas and Natural Gas Liquids
- SFG Gas Insulated Switchgear
- Electric Power Entities

The general process for reporting under each of the listed subparts is essentially similar.

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Reporting – Subpart MM

	Tool.xls		
W - Petroleum and Natural Gas Systems	Petroleum and Natural Gas Systems Activity Data Workbook.xls	n/a	XLS
W - Petroleum and Natural Gas Systems	Petroleum and Natural Gas Systems Calculation Tool.xls	n/a	n/a
Y - Petroleum Refineries	Subpart Y Additional Production Data and Solomon Energy Efficiency Index.xls	n/a	XLS
MM - Suppliers of Transportation Fuels Calculation and Reporting Tool	Suppliers of Transportation Fuels Calculation and Reporting Tool.xls	carb_subpart_mm.xsd	XML
NN - Suppliers of Natural Gas and NGLs	Subpart NN - Interstate NG Pipeline.xls	n/a	XLS
SFG Gas Insulated Switchgear	SFG Gas Insulated Switchgear (GIS) Reporting.xls	n/a	XLS
Electric Power Entities	Workbook 1 - Electricity Imports and Exports (beta test version).xls	carb_epe_import_export.xsd	XML
Electric Power Entities	Workbook 2 EPE Supplementary Data for MURP.xls (coming soon)	n/a	XLS
Electric Power Entities	Workbook 3 EPE Supplementary Data for WAPA and DWR SWP.xls (coming soon)	n/a	XLS
Electric Power Entities	Workbook 4 EPE Optional Asset Controlling Supplier Report (BPA only).xls (coming soon)	n/a	XLS

Once all applicable Reporting Forms have been saved to your computer, open each file and enter the required information according to the general help provided below and the instructions provided within each Reporting Form. Always remember to save each completed Reporting Form when finished.

Reporting Forms General Help

The guidance provided in this section applies to all reporting forms. Additional subpart-specific guidance is provided within the reporting form(s) for each subpart.

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Reporting - Subpart MM

Calculations and Reporting

1. Calculations and Reporting

2. Calculate CO₂ emissions using Equation MM-1 from 98.353(a)

3. Calculate CH₄ and N₂O emissions using Equation C-8 from 98.33(c)(1) for a

4. Reported Emissions

5. Blendstock, Distillate Fuel Oil or Biomass-Derived Fuel

Fuel Type	CO ₂ Emissions (metric tons CO ₂ per barrel)	CH ₄ and N ₂ O Emissions (metric tons CH ₄ and N ₂ O per barrel)
CBOB-Summer	0.3753	0.00
Regular	0.3753	0.00
Midgrade	0.3753	0.00
Premium	0.3753	0.00
CBOB-Winter	0.3663	0.00
Regular	0.3664	0.00
Midgrade	0.3677	0.00
Premium	0.3677	0.00
RB0B-Summer	0.3685	0.00
Regular	0.3677	0.00
Midgrade	0.3677	0.00
Premium	0.3677	0.00
RB0B-Winter	0.3677	0.00

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Reporting - Subpart MM

Calculations and Reporting						
1	Calculations and Reporting	Calculate CO ₂ emissions using Equation MM-1 from 98.393(a)	Calculate CH ₄ and N ₂ O emissions using Equation C-8 from 98.33(c)(1) for			
2		CO ₂ = Product _i × EF _i (Eq. MM-1)	CH ₄ or N ₂ O = 1 × 10 ⁻⁹ × Fuel × HHV × EF (Eq. C-3)			
3	Reported Emissions					
4	Blendstock, Distillate Fuel Oil or Biomass-Derived Fuel	(Product) Annual volume of product "Y" produced, imported, or exported by the reporting party (barrels)	(EF) Product-specific CO ₂ emission factor from Table MM-1 (metric tons CO ₂ per barrel)	(Fuel) Volume of the fuel consumed (gallons per year)	(EF _{CH4}) Fuel-specific default emission factor for CH ₄ from Table C-1 of Subpart C (metric tons CH ₄ per gallon)	(EF _{N2O}) Fuel-specific default emission factor for N ₂ O from Table C-2 of Subpart C (metric tons N ₂ O per gallon)
5	CO ₂ —Summer					
6	Regular		0.3753	0.00		0.02
7	Midgrade		0.3758	0.00		0.02
8	Premium		0.3753	0.00		0.02
9	CO ₂ —Winter					
10	Regular		0.3653	0.00		0.02
11	Midgrade		0.3684	0.00		0.02
12	Premium		0.3705	0.00		0.02
13	N ₂ O—Summer					
14	Regular		0.3586	0.00		0.02
15	Midgrade		0.3677	0.00		0.02
16	Premium		0.367	0.00		0.02
17	N ₂ O—Winter					
18	Regular					
19	Midgrade					
20	Premium					

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Reporting - Subpart MM

Guidance for Exporting Data to XML

1. Enter all data for each worksheet within the workbook where indicated.
2. Save your workbook.
3. Export Excel data to XML.

For Excel 2003, select the menu **Data / XML / Export**.

For Excel 2007 and Excel 2010, right click within a linked cell. Select **XML / Export**.

Equation P-1:

$$CO_2 = \frac{CH_4}{12} \times \frac{44}{12} \times Fuel \times EF_{CH_4} + \frac{N_2O}{44} \times \frac{44}{44} \times Fuel \times EF_{N_2O}$$

Input Data

Equation P-1: Data Export Guidance

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Reporting – Subpart NN

There are six Supplier Types:

- Publicly Owned Natural Gas utility (LDC)
- Public Utility Gas Corporation (LDC)
- Intrastate Natural Gas Pipelines (LDC)
- Interstate Natural Gas Pipelines
- Natural Gas Liquid Fractionator
- Liquefied Petroleum Gas Consignee

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HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT Help

Using Cal e-GGRT for Subpart NN reporting

ARB Test Facility - TEST ONLY - Production Site (2011)

Section 95122 (Subpart NN): Suppliers of Natural Gas and Natural Gas Liquids

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

Subpart NN requires affected suppliers of natural gas and Natural Gas Liquids (NGL) to report the amount of carbon dioxide (CO₂) that would result from the complete combustion or oxidation of the annual quantity of products supplied. Use this page to identify your supplier type. For additional information about Subpart NN reporting, please use the Cal e-GGRT Help link(s) provided.

Supplier Type * Select

CANCEL START

Contact Us

Cal e-GGRT RY2011 R.54 | NNA-0

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Reporting – Subpart NN

Section 95122 (Subpart NN): Suppliers of Natural Gas and Natural Gas Liquids

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS FOR LOCAL DISTRIBUTION COMPANIES (LDCs)

Subpart NN requires affected natural gas LDCs to report the quantity of CO₂ that would result from the complete combustion or oxidation of the annual volumes of natural gas provided to end-users on their distribution systems. First, enter fuel supply and Greenhouse gas (GHG) data required by Subpart NN. Next, enter the natural gas volumes supplied to residential, commercial and industrial consumers and electricity generating facilities. For additional information about Subpart NN reporting, please use the Cal e-GGRT Help link(s) provided.

* denotes a required field

Subpart NN: View Validation

Supplier Type * Publicly-owned natural gas utility (LDC) [CHANGE]

GHG SUMMARY

Product	CO ₂ (metric tons)	Status
Natural Gas, Biomethane, Non-exempt Biomethane		Incomplete OPEN

NATURAL GAS VOLUMES BY END USE CATEGORY (MSCF)

Residential Consumers	Commercial Consumers	Industrial Consumers	Electricity Generating Facilities
			OPEN

Facility Overview

*A status of "Incomplete" means that one or more data elements that are inputs to one of this subpart's equations are incomplete. As a result, Cal e-GGRT is unable to perform the necessary calculation(s). For details, refer to the Equation Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not

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Reporting – Subpart NN

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Reporting – Subpart PP

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Reporting Subpart PP

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Reporting Subpart PP

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HOME FACILITY MANAGEMENT DATA REPORTING

Cal e-GGRT
California Electronic Greenhouse Gas Reporting Tool

ARB Test Facility - TEST ONLY - Production Site (2011)
Section 95123 (Subpart PP): Suppliers of Carbon Dioxide
Subpart Overview Miscellaneous Information

MISCELLANEOUS INFORMATION FOR SUPPLIERS OF CARBON DIOXIDE

- Each type of equipment used to measure the total flow of the CO₂ stream
- The number of days for which substitute data procedures were used to determine the mass or volume, concentration and density
- The annual quantity of CO₂ transferred to one or more end use application

TYPES OF EQUIPMENT USED TO MEASURE THE TOTAL FLOW OF THE CO₂ STREAM

ID	Equipment Type	Delete
+	ADD a Type of Equipment	

Please provide the aggregated annual quantity of CO₂ your facility transferred to each of the following end-use categories (enter zero if none):

Food and beverage	(metric tons)
Industrial and municipal water/wastewater treatment	(metric tons)
Metal fabrication, including welding and cutting	(metric tons)

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Reporting - Subpart PP

Cleaning and solvent use (metric tons)

Fire fighting (metric tons)

Transportation and storage of explosives (metric tons)

Enhanced oil and natural gas recovery (metric tons)

Long-term storage (sequestration) within California (metric tons)

Research and Development (metric tons)

Other/unknown (metric tons)

Please provide the aggregated annual quantity of CO₂ your facility imported into California and exported out of California.

CO₂ imported into California (metric tons)

CO₂ exported from California for purposes other than geologic sequestration (metric tons)

CO₂ exported from California for the purpose of geologic sequestration (metric tons)

Please provide the number of days for which substitute data procedures were used to measure the following:

CO₂ mass or volume (days)

CO₂ concentration (days)

CO₂ stream density (days)

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Data Validation

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Reporting: Validation Messages

- Tool provides data validation
- Most messages must be cleared before report submittal
- Clicking on message brings you to where the issue occurred

ARB Test Facility - TEST ONLY - Production Site (2011)
95115, 95112 (Subpart C) - Stationary Fuel Combustion
Subpart Overview Validation Report

SUBPART C VALIDATION REPORT
This report contains a complete set of validation messages for all data required by this Subpart. For additional information about Validation Reports, please use the Cal e-GGRT Help link(s) provided.

Print-friendly version

FACILITY-LEVEL VALIDATION MESSAGES

Validation Type ¹	ID ²	Message ³
No facility-level validation messages.		

CONFIGURATION-LEVEL VALIDATION MESSAGES

Validation Type ¹	ID ²	Unit Name	Message ³
Data Completeness	C125	PG Single Unit	Annual carbon dioxide emissions from combustion of all biomass fuels combined (if any of the units burn fossil AND biomass). This data element is required.
Data Completeness	C129	PG Single Unit	Annual carbon dioxide emissions from solvent. This data element is required.

FUEL-LEVEL VALIDATION MESSAGES

Validation Type ¹	ID ²	Unit Name	Message ³
Data Completeness	C145	PG Single Unit	Natural Gas (Weighted U.S. Average) Annual carbon dioxide emissions from combustion of the specified fuel. This data element is required.

¹ Validation Types: Cal e-GGRT generates a variety of validation types, defined below:

- Data Completeness:** data required for reporting is missing or incomplete
- Data Quality:** data is outside of the range of expected values. The value you have provided is outside the ARB estimated range for this data element. Please double check the value and retest, if necessary. If you believe it to be correct, please submit the value as is.
- Screen Error:** a data value or combination of data values prevents Cal e-GGRT from continuing to the next page. Typically, this will not appear on the Validation Report, but instead will be displayed on the data entry page at the time the error was created.

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Key Reporting Dates

- See **Key Dates** web page for specific dates applicable to reporting year
- <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-dates.htm>
- Actual Reporting Dates may differ from dates specified in the regulation if the specified dates fall on a Saturday, Sunday, or Holiday
- **Key Dates** page is updated annually with required submission dates

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For More Information

- GHG Reporting Website
 - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>
- See website for:
 - Regulation reporting guidance and fact sheets
 - Reporting tool information
 - “Clean” copy of the regulation (no underline/strikeout)
 - Sector specialist contacts
- Email reporting tool questions to: ghgreport@arb.ca.gov

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GHG Reporting Contacts

Subject Matter	Contact
GHG Mandatory Reporting (General)	Dave Edwards, Manager 916.323.4887
Reporting Requirements, Stationary Combustion, Other Sectors (cement, glass, pulp and paper, etc.)	Patrick Gaffney 916.322.7303
Reporting Tool Registration and General Questions	Karen Lutter 916.322.8620
Electricity Generation and Cogeneration Facilities	Anny Huang 916.323.8475
Electricity Retail Providers and Electricity Marketers	Wade McCartney 916.327.0822
Fuel and CO2 Suppliers - Transportation Fuels, Natural Gas, LPG, CO2	Byard Mosher 916.323.1185
Petroleum Refineries, Hydrogen Plants, Oil & Gas Production	Byard Mosher 916.323.1185
Greenhouse Gas Report Verification	Renee Lawver, Manager 916.322.7062
Chief – Greenhouse Gas Emission Inventory Branch	Richard Bode, Chief 916.323-8413

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